

PATENT ABSTRACTS OF JAPAN

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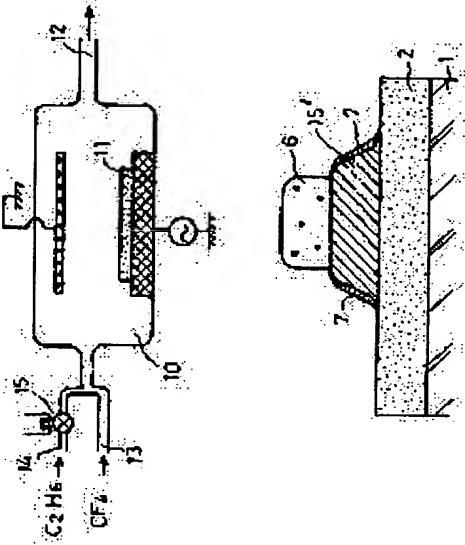
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(54) ETCHING METHOD OF POLYCRYSTALLINE SILICON FILM

(57)Abstract:

PURPOSE: To obtain a side surface of Si film pattern in the desired side wall shape by increasing or decreasing a partial pressure of ethane gas when executing the active ion etching to a polycrystalline Si film with the mixed gas of fluoric gas and ethane gas.

CONSTITUTION: A resist film 6 of the specified pattern is provided on the polycrystalline Si film 5 deposited on a semiconductor substrate 1 and the film 5 is etched as follow using said resist film as the mask. A sample 11 is put into an etching chamber 10 having the exhaust port 12 at the one end and CF4 gas inflow port 13 and C2H6 inflow port 14 at the other end and electrodes are disposed on the sample 11 with the specified interval. With such structure, a degree of opening or closing of electromagnetic valve 15 provided at the inflow port 14 is controlled automatically with a microcomputer and thereby the CF4 gas pressure is kept constant to 0.2Torr. Meanwhile, the ethane gas is first set to 0.1Torr and is gradually reduced to 0 and then it is reset to the initial pressure. Thereby, a polymer film 7 generated at the side surface of film 5' as described above is shaped as desired.



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